

REMARKS

Reconsideration of the application is respectfully requested based on the following remarks. In addition, the claims have been amended to further clarify the subject matter regarded as the invention.

REJECTION OF CLAIMS 1-13 UNDER 35 USC §103

In the Office Action, the Examiner rejected claims 1-36 under 35 USC §103 as being unpatentable over Eaton et al., U.S. Patent No. 6,012,050, ('Eaton' hereinafter) in view of Wilkinson et al. (WO 98/19237). This rejection is fully traversed below.

Claim 1 recites a terminal comprising, in part:

an environment services layer that supplies one or more environment dependent services that are dependent upon at least one of the operating system and the hardware of the terminal; and

a terminal application compatible with the card application and having a platform independent portion that is independent of the hardware and the operating system of the terminal, whereby the terminal application is developed independently of the hardware and the operating system of the terminal.

Eaton neither discloses nor suggests the invention of claim 1. More particularly, Eaton neither discloses nor suggests a terminal that comprises an environment services layer that supplies one or more environment dependent services that are dependent upon at least one of the operating system and the hardware of the terminal. The Examiner refers to blocks 111-115 as environment dependent services. Applicant respectfully traverses this assertion. Blocks 111-115 are referred to as an external data source 111, and operation means 112, 113, 114, 115. However, neither the external data source 111 or the operation means 112-115 are dependent upon the operating system or hardware of the terminal. In other words, blocks 111-115 appear to be external to terminal, and not dependent on the operating system or the hardware of the terminal. Accordingly, blocks 111-115 neither disclose nor suggest an environment services layer that supplies one or more environment dependent services that are dependent upon at least one of the operating system and the hardware of the terminal.

The Examiner further states that “[t]he environmental dependent services may consist of any combination of structures, affording the possibility of identical structures.” However, Eaton neither discloses nor suggests that environmental dependent services consist of any combination of structures, affording the possibility of identical structures.

In addition, Eaton neither discloses nor suggests a terminal comprising terminal application compatible with the card application and having a platform independent portion that is independent of the hardware and operating system of the terminal, whereby the terminal application is developed independently of the hardware and operating system of the terminal. The Examiner states that the Integrated Channel Manager 100 contains applications that are independent from the hardware or the operating system. However, Eaton states that business application functions are channel independent (see col. 4, lines 5-8) and that functions such as function 144 is unaware of the customer service channel originating the call, i.e., is unaware of its channel-specific hardware and software systems (see col. 4, lines 23-27). Eaton does not state that such functions are independent of the hardware and operating system of the terminal, but rather that such functions are channel independent. In other words, channel-specific hardware may include, for example, a digital telephone, an ATM, a branch office, a branch sales office, a self service sales terminal, a home banking PC, and an interactive television. See Abstract, Eaton. Accordingly, Eaton neither discloses nor suggests the invention of claim 1.

The Examiner states that the system may be used as a loyalty card service. The Applicant respectfully traverses this assertion. Eaton neither discloses nor suggests the use of the present invention with a card such as a loyalty card or a smart card. The Examiner further admits that Eaton fails to teach the terminal application as compatible with a smart card, the card’s information able to use different modules or applications, and the terminal application as portable to a plurality of terminals. The Examiner seeks to cure the deficiencies of Eaton with Wilkinson. However, Wilkinson fails to cure the deficiencies of the primary reference.

With respect to claim 21, the Examiner has taken official notice that it is known in the art for terminals of financial institutions to implement features if the card of a user is not recognized. Applicant respectfully traverses this assertion. Neither of the references, separately or in combination, disclose or suggest a business logic layer within an environment component as claimed in claim 21 that implements business policies associated with the terminal. For instance, claim 25 further recites performing at least one of rejecting and reclaiming the card at the business logic layer when the card is not recognized. Neither of the

references, separately or in combination, disclose or suggest a method of executing a terminal application using such a business logic layer.

Based on the foregoing, it is submitted that the independent claims are patentable over the cited references. In addition, it is submitted that dependent claims are also patentable for at least the same reasons. The additional limitations recited in the independent claims or the dependent claims are not further discussed as the above discussed limitations are clearly sufficient to distinguish the claimed invention from the cited references. Thus, it is respectfully requested that the Examiner withdraw the rejection of the claims under 35 USC §103(a).

SUMMARY


It is submitted that the cited references, alone or in any combination, do not teach or suggest the features of the claimed invention. Therefore, it is submitted that the claims are patentably distinct from the cited references. Reconsideration of the application and an early Notice of Allowance are earnestly solicited.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 50-0388 (Order No. VISAP018).

Respectfully submitted,

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APPENDIX – Marked up copy of the claims

1. (Twice amended) A terminal for accepting a card that implements a card application of a merchant, the terminal comprising:
 - hardware of the terminal;
 - an operating system of the terminal; and
 - an environment services software layer of the terminal that supplies one or more environment dependent software services that are dependent upon at least one of the operating system and the hardware of the terminal; and
 - a terminal application of the terminal compatible with the card application and having a platform independent portion that is independent of the hardware and operating system of the terminal, whereby the terminal application is developed independently of the hardware and operating system of the terminal.
2. (Twice Amended) The terminal as recited in claim 1, further comprising:
 - an environment services access module that enables the terminal application to select and activate the environment dependent software services provided by the environment services software layer when the card is inserted into the terminal.
3. (Once Amended) The terminal as recited in claim 1, wherein the environment dependent software services are accessible by the platform independent portion of the terminal application.
4. (Once Amended) The terminal as recited in claim 1, wherein each of the environment dependent software services have an identical structure.
5. (Twice Amended) The terminal as recited in claim 1, further comprising:
 - an application programming interface that encapsulates the environment dependent software services such that the environment dependent software services are visible to the terminal application.
6. (Twice Amended) The terminal as recited in claim 1, further comprising:

an application programming interface that enables the terminal application to communicate with the environment services software layer, wherein the environment dependent software services provided by the environment services software layer are accessible by the platform independent portion of the terminal application through the application programming interface.

7. (Once Amended) The terminal as recited in claim 1, further comprising a business logic layer responsible for implementing business policies of an entity associated with the terminal.

8. The terminal as recited in claim 7, wherein the terminal application includes one or more modules associated with one or more commands accessible to the business logic layer.

9. The terminal as recited in claim 8, wherein the business logic layer includes a module selection module for selecting from the modules by calling selected ones of the commands.

10. The terminal as recited in claim 7, further including a terminal application access module that enables the business logic layer of the environment component to select and activate one or more modules within the terminal application when the card is inserted into the terminal.

11. The terminal as recited in claim 10, wherein the modules selected and activated are dependent upon the card inserted into the terminal and user-selected command at the terminal.

12. (Once Amended) The terminal as recited in claim 7, further including:
a first application programming interface that enables the terminal application to communicate with the environment services software layer, wherein the environment dependent software services provided by the environment services software layer are accessible by the platform independent portion of the terminal application through the application programming interface; and

a second application programming interface that enables the business logic layer to communicate with the terminal application.

13. (Once Amended) The terminal as recited in claim 12, wherein the environment dependent software services are implemented by one or more procedures and associated parameters and wherein the first application programming interface enables visibility of names of the procedures and associated parameters to the terminal application accessing the first application programming interface.
14. The terminal as recited in claim 12, wherein the terminal application is implemented by one or more modules and wherein the second application programming interface enables visibility of the modules to the business logic layer accessing the second application programming interface.
15. The terminal as recited in claim 14, wherein each of the modules includes one or more procedures and associated parameters and wherein the second application programming interface enables visibility of names of the procedures and associated parameters.
16. (Once Amended) The terminal as recited in claim 1, wherein the environment dependent software services include services that enable peripheral devices to be accessed.
17. The terminal as recited in claim 16, wherein the peripheral devices include at least one of a printer and a user interface.
18. The terminal as recited in claim 1, wherein the terminal application is portable on a plurality of terminals manufactured by different terminal manufacturers.
19. The terminal as recited in claim 1, wherein the terminal application includes a card directory module capable of recognizing one or more cards.
20. The terminal as recited in claim 19, wherein the terminal application further includes one or more modules associated with the cards and the card directory module accesses selected ones of the modules when one of the cards is inserted into the terminal.
21. (Once Amended) A method of executing a terminal application on a terminal suitable for accepting a card implementing a card application of a merchant, the method comprising:

performing card recognition to determine whether the card is recognized by a terminal application, the terminal application including one or more modules associated with one or more commands accessible to a business logic layer;

when it is determined that the card is not recognized, transferring control to the business logic layer, the business logic layer responsible for implementing business policies associated with the terminal; and

when it is determined that the card is recognized, selecting one of the modules, executing the selected module, and transferring control to the business logic layer upon completion of execution of the module.

22. The method as recited in claim 21, further including:

providing card information associated with the card to the business logic layer.

23. The method as recited in claim 22, wherein the card information includes information associated with a card application.

24. The method as recited in claim 22, wherein the card information includes information associated with multiple card applications resident on the card.

25. The method as recited in claim 21, further including:

performing at least one of rejecting and reclaiming the card at the business logic layer when the card is not recognized.

26. The method as recited in claim 21, wherein performing card recognition includes:

invoking a card directory module of the terminal application, the card directory module being associated with one or more card directory services suitable for recognizing one or more cards; and

launching the card directory services available to the card directory module until one or more of the card directory services are found that match information on the card.

27. The method as recited in claim 21, wherein when the card is recognized, the method further includes:

selecting at the business logic layer one of the modules associated with the card application.

28. The method as recited in claim 21, wherein when the card is recognized, the method further includes:

- ascertaining whether the card is a card that supports multiple functions; and
- selecting one of the modules associated with the card application when it is ascertained that the card does not support multiple functions.

29. The method as recited in claim 28, wherein when it is ascertained that the card supports multiple functions, the method further includes:

- determining whether the terminal supports multiple functions;
- when it is determined that the terminal does not support multiple functions, selecting one of the modules associated with the card application; and
- when it is determined that the terminal supports multiple functions, selecting one of the modules according to at least one of priority and a user selection.

30. The terminal as recited in claim 20, wherein the card is a smart card and the terminal is arranged to accept smart cards.

31. The terminal as recited in claim 21, wherein the card is a smart card and the terminal is arranged to accept smart cards.

32. (Once Amended) A terminal arranged to accept a card and implement a terminal software application, the terminal comprising:

- terminal hardware;
- a terminal-dependent operating system;
- an environment services software layer that provides one or more environment dependent software services that are dependent upon at least one of the terminal hardware and the terminal-dependent operating system;
- a first application programming interface through which a terminal software application may access the environment services software layer;
- a business logic software layer that implements business policies associated with the terminal; and

a second application programming interface through which the business logic software layer may access the terminal software application, whereby the terminal software application may be developed independently of the terminal.

33. The terminal as recited in claim 32, further comprising:

a terminal software application arranged to make calls to the first application programming interface to access the environment services software layer, and being arranged to respond to calls from the second application programming interface for the business logic layer.

34. (Once Amended) The terminal as recited in claim 32, further comprising:

an environment services access module that enables the terminal software application to select and activate the environment dependent software services provided by the environment services software layer when the card is inserted into the terminal.

35. The terminal as recited in claim 32, wherein the terminal application is a stored value, credit, debit, or loyalty software application.

36. The terminal as recited in claim 32, wherein the card is a smart card.